Protection from Radioactive Fallout

SPECIAL TASK FORCE REPORT TO

GOV. NELSON A. ROCKEFELLER

STATE OF NEW YORK

EXCELSIOR

July 6, 1959

". . . The evidence is that the Soviets intend to use nuclear blackmail as a major weapon to promote their objectives — namely to spread communism throughout the world.

"They showed this intent at the time of the Suez crisis when they threatened England and France with ballistic attacks. They used these tactics again, chiefly against Turkey, at the time of the Middle East crisis about a year ago.

"They will use the same threat against this country."

ALLEN W. DULLES, Director
Central Intelligence Agency

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THE NEW YORK STATE CIVIL DEFENSE COMMISSION

Special Task Force on Protection from Radioactive Fallout

STATE OF NEW YORK

July 6, 1959

To the Honorable Nelson A. Rockefeller,
Governor of the State of New York:

We are pleased to submit the Report of the Special Task Force on Protection from Radioactive Fallout.

This Task Force was established by you to study the problem of radioactive fallout in New York State in the event the United States is attacked with nuclear weapons and to recommend protective steps which the State should take to assist its people to meet the responsibility that has been placed upon them under the National Plan for Civil Defense, namely, the responsibility to survive, without any outside help, for a minimum of two weeks after a nuclear attack.

We wish to express our great appreciation to the many State and Federal officials, and their staffs, who have generously given us the benefit of their experience, their advice and their constructive criticism in the preparation of this report.

Respectfully submitted,

OSCAR M. RUEBHAUSEN, *Chairman*

DOUGLASS C. COUPE, *Commissioner, Division of Standards and Purchase*

JAMES W. GAYNOR, *Commissioner, Division of Housing*

HERMAN E. HILLEBOE, M.D., *Commissioner, Department of Health*

PAUL H. HOCH, M.D., *Commissioner, Department of Mental Hygiene*

RAYMOND W. HOUSTON, *Commissioner, Department of Social Welfare*

T. NORMAN HURD, *Director, Division of the Budget*

J. BURCH McMORRAN, *Superintendent, Department of Public Works*

JOSEPH H. MURPHY, *Commissioner, Department of Taxation and Finance*

CONTENTS

	Page
Introductory	5
The Hazard	6
The Responsibility	10
The Essentials	12
1. Knowledge	12
2. Shielding	12
3. Survival Supplies	14
4. Summary	15
The Program	16
Conclusion	19
Some official reactions to this report	20

Introductory

July 6, 1959

To the Governor:

As you so forcefully emphasized when you established this Special Task Force, you have a personal responsibility as Governor to take all possible steps to protect the lives and health of the people of the State. This is a responsibility which, we know, you feel keenly.

The threat of fallout from nuclear weapons launched by an enemy poses perhaps a greater hazard to the lives of our citizens than any other which our society may be called upon to meet. We have, at your suggestion, confined our inquiry to the problem of fallout in the event of nuclear war and the steps that might be taken to protect against it. Our deliberations, however, have proceeded in a larger context which we believe should be summarized at the outset.

We do not believe that nuclear war is inevitable. We are confident that our nation's resourcefulness, wisdom and purpose at the conference table will succeed in protecting world peace. If a test of military strength, however, does become necessary, we believe that our people and our democratic society can be successfully defended. This assumes, however, that our nation has done all that is reasonably within its capacity to strengthen both its position in negotiation and its defense against attack. As matters now stand, however, our people are not prepared for a nuclear* war. Without such preparation the prospects for survival in a nuclear attack are poor.

The physical ability of families to survive even the most terrifying nuclear attack is, in the ultimate reckoning, a factor of crucial importance to our national security. The will to survive, coupled with the ability to do so, rank next to military power in the nuclear age as the best deterrents to aggression and the best assurance of final victory over any enemies who might attack us. Equally important, such an ability and will can contribute directly to the success, the strength and the sense of purpose of our negotiators at the international conference tables of the world.

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* *As used in this report the word nuclear is designed to embrace both nuclear and thermonuclear weapons.*

We are gratified, therefore, that we have concluded our inquiry with the conviction that *a very high degree of protection from fallout can be achieved, that it is achievable now and achievable at a cost within the reach of our people and our State.* We are satisfied that, although thermonuclear war would be a major disaster, the magnitude of the disaster can be markedly limited by protective measures.

We view, therefore, the provision of fallout protection – with its assurance of survival for the great bulk of our people and for the free institutions which give meaning and dignity to their lives – as an essential, positive step. In fact, we hold it to be one of the most effective ways in which the State of New York, and its people, can contribute today to the preservation of peace.

Our conclusion that fallout protection is possible has far-reaching significance. For, as soon as our nation believes it to be both economically and technically possible to limit the consequences of nuclear war, the easier it will be for us to proceed vigorously to do so.

the Hazard

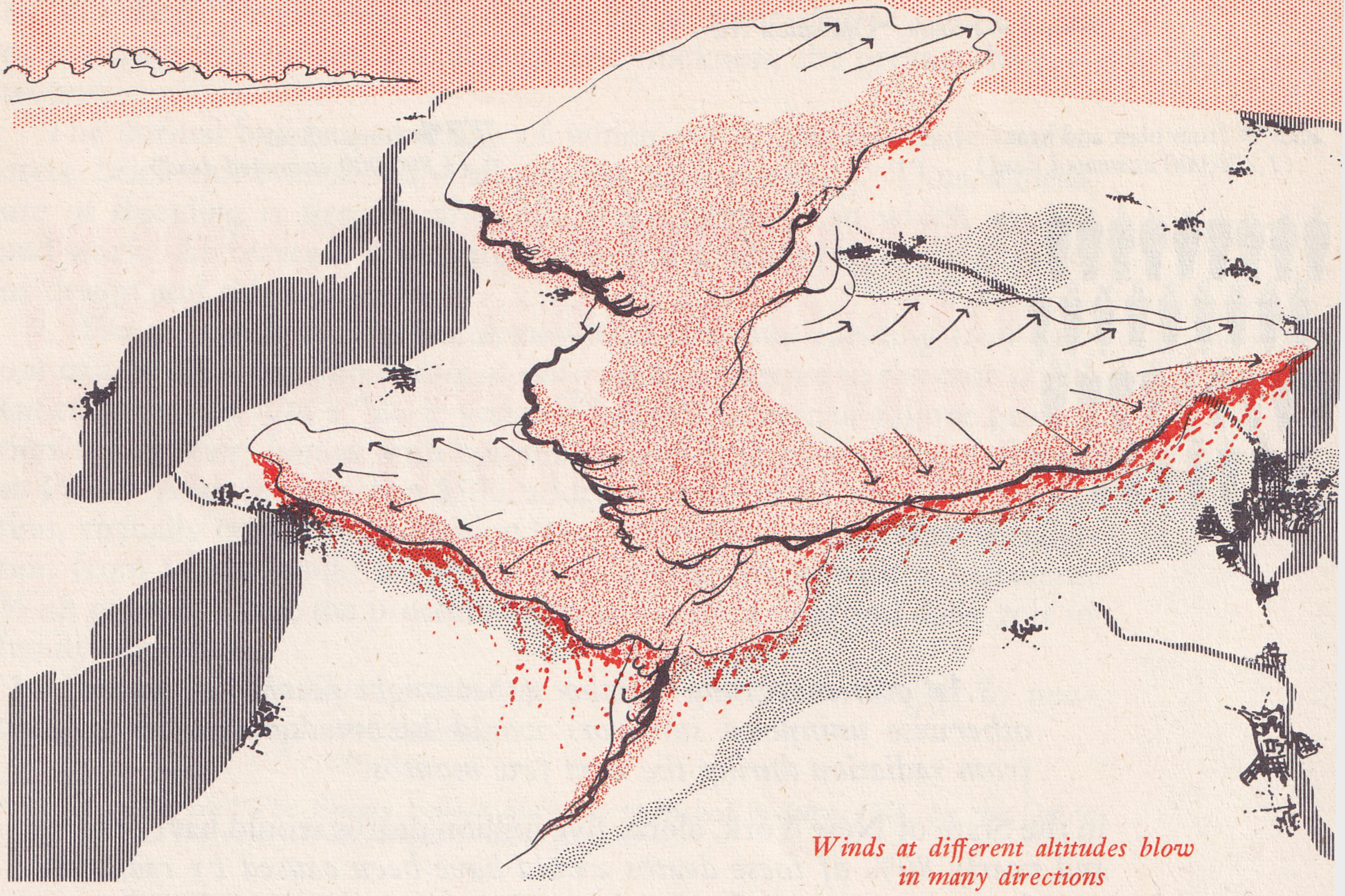
Fallout is a relatively new phenomenon – and it has added a new dimension to war.

When the fireball from a nuclear weapon touches the earth's surface, great masses of pulverized debris are sucked upward. These minute particles, mixed with particles from the weapon itself, will be intensely radioactive. They may ascend into the stratosphere as high as 16 or more miles above the earth's surface. Eventually, however, the forces of wind and gravity will bring this dust-like debris, bearing its deadly radiation, back upon the earth. This is fallout.

Fallout, when it returns to earth, may appear as dust particles. More often the particles will be too small to be seen. Moreover, the radiation borne by the fallout is invisible and odorless. It cannot be seen, touched, tasted or felt. It is a silent killer. The radiation can be deadly externally; it is even more likely to be lethal if the fallout particles are inhaled with one's breath or eaten with one's food.

No one can predict exactly where or when the fallout will occur. This will depend on the site of the bomb bursts, the height of the explosion, the weather at the time, the size and weight of the radioactive particles, the strength and direction of the winds, and a variety of other factors.

How fallout spreads



Winds at different altitudes blow in many directions

What can be predicted with certainty, however, is that, in the event of a major nuclear attack upon the continental United States, every village, city and farm will be threatened by fallout. The most intense radiation from fallout may occur as many as 75 miles away from the site of a bomb burst; and radiation of fatal intensity can be expected – largely down wind, but following no certain pattern – hundreds of miles away from the initial blast.

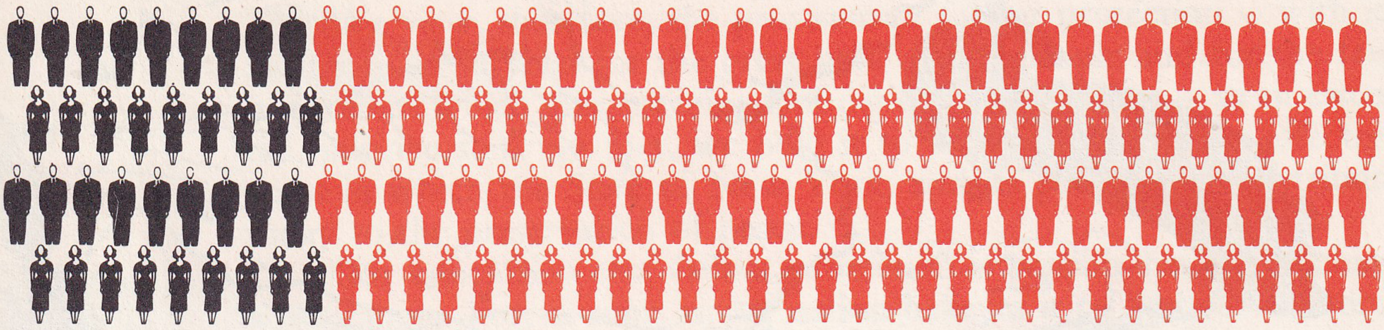
It is appallingly clear that an attack with a number of nuclear weapons of high power on any part of the United States may blanket regions many miles from the target area with a lethal coat of radiation. What is also now terribly clear is that, without protection from fallout, the death toll from radiation can be several times greater than the total deaths attributable to the blast and heat of the bursting weapons.

In 1958 a simulated attack with 40 nuclear weapons was made on the six New England States, New York and New Jersey. This region was also affected by the fallout from bombs which were assumed to have exploded up wind in Ohio, Michigan, New Jersey and Pennsylvania. Although many of the bombs in that operation were assumed to be relatively modest in size, it was reported that:

> *"The radioactive fallout situation was extremely serious. Eighty percent of the Region's total area was affected. Only emergency operations were possible because of the radiation intensity.*

Causes of death

New York State, "Operation Alert 1959"



Fallout projected from 7 ground bursts assumed to have hit New York State, plus even larger amounts resulting from bombs hitting Michigan, Ohio, Pennsylvania and New Jersey.

"An ever-increasing number (that might reach 50 percent) of otherwise uninjured survivors would become seriously ill or die from radiation during the next few months."

In the State of New York, alone, five million deaths would have resulted; *and nearly 80% of these deaths would have been caused by radiation.*

In 1959 another simulated attack produced essentially the same results. In addition to nearly 4,000,000 deaths from fallout in New York State alone, another 4,000,000 people in the state would have been seriously disabled by radiation sickness. These 8,000,000 assumed casualties from fallout are to be compared with nearly 1,200,000 deaths from the blast of the nuclear bombs. Even if New York were not attacked directly, it could be badly contaminated by the fallout from bomb strikes in other states.

Radiation from fallout, therefore, presents a massive threat to target and non-target areas alike. There is no place in our state sufficiently remote from a possible target to be free of the threat posed by fallout. Inaccurate marksmanship, knockdowns of enemy missiles short of the target, the vagaries of wind and weather bearing their deadly cargo of fallout, could bring the fatal rays of radiation into every home, factory, school and office.

Fortunately, satisfactory protection from fallout can be obtained by relatively simple means. *The tremendous number of casualties from fallout is, in fact, avoidable.*

Two factors, working in combination, make the disastrous consequences of fallout preventable. They are time and shielding. Time is a factor because the intensity of radiation from fallout diminishes at a rapid rate with the passage of time. For example, 7 hours after a bomb burst, the radiation intensity is only about 10% of what it was at one hour after explosion.

Not only does radiation diminish with time, it can also be blocked by shielding. While shielding is afforded in some degree by all kinds of materials, the greater the density and thickness, the greater the protection.

The normal building materials of which our homes are made — concrete, brick and even wood — all provide some shielding. Thus, a measure of shielding is already afforded by the buildings in which we live and work. An increase in the effectiveness of shielding is simply a matter of design and thickness.

We are satisfied from our review that effective shielding from fallout can be designed into homes at only a small increase in the cost of the entire structure. On a "do-it-yourself" basis, the cost of fallout protection for existing homes with basements could be as low, for example, as $150.* And, for less than $500, added to the normal cost of construction, virtually complete protection from the maximum foreseeable radiation from fallout could be provided in a new house with a basement. With planning, too, the protected area can serve a dual and daily role in family activities.

Means are readily available at modest cost, accordingly, to neutralize the catastrophe of fallout.

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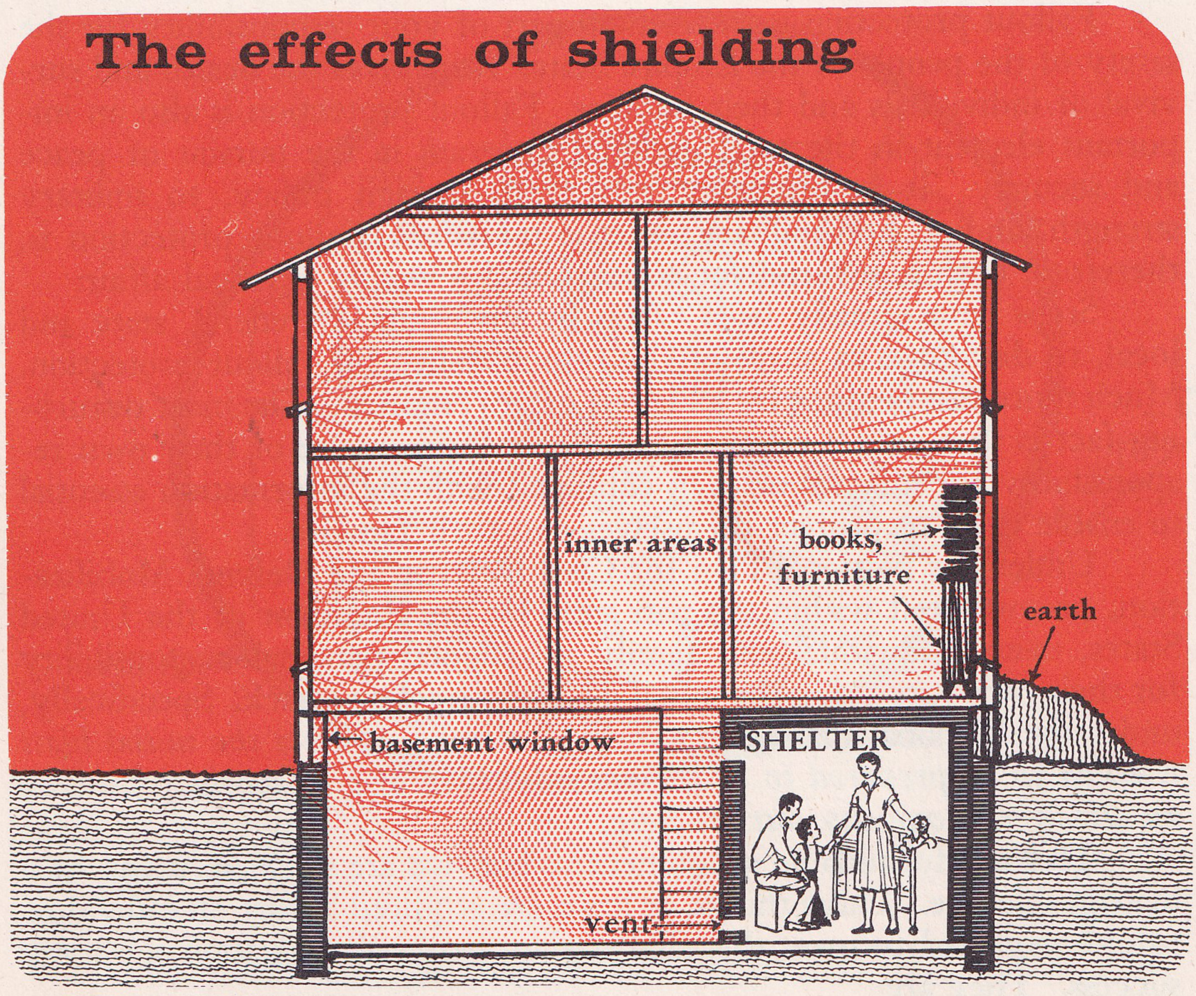
* *For example, see "The Family Fallout Shelter," published in June, 1959, by the Office of Civil and Defense Mobilization, Washington, D. C.*



the Responsibility

Fallout protection is an essential part of your responsibility for the safety of the people of the Empire State. It involves the health and survival of individuals and their families. Fallout protection is also an important element in the total national program in the pursuit of peace and security. It is intimately related to foreign policy, to military strength, and to non-military defense measures. Fallout protection is, therefore, both a government concern and a deeply personal affair.

Steps have already been taken by government, federal, state and local, to discharge its share of the responsibility for fallout protection. Much more can be done by all levels of government. The most disturbing fact is that only a relatively few people are aware of their own responsibility for survival or even equipped with the information essential to enable them to protect themselves and their families.

Under the National Plan for Civil Defense and Defense Mobilization, promulgated within the past year by the President of the United States, every individual and family is assigned personal responsibility for their own survival in the initial days of a nuclear attack. Specifically, under the National Plan, *every individual who survives the initial blast is asked to be prepared to exist for a minimum of two weeks following an attack without any outside help.*

This is a formidable assignment – but, we are satisfied, it can be a manageable one. Three things, at least, are required before an individual can be expected to meet this challenging, personal obligation with any success. They are:

First: **Knowledge** as to the nature of his responsibility and what he can do about it;

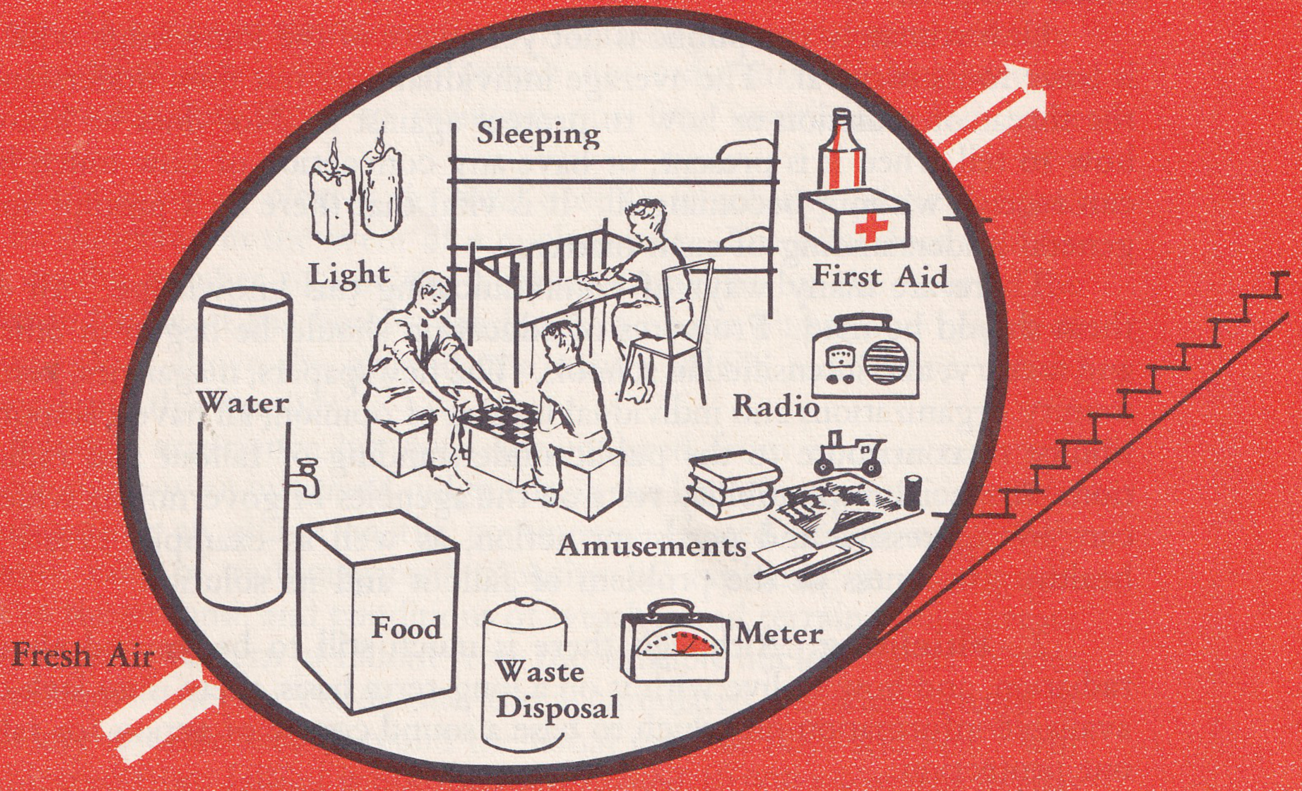
Second: **Shielding** – readily available and previously prepared; and

Third: **Pre-stored stocks of survival supplies,** including, especially, food and water.

These three items – knowledge, shielding and pre-stored stocks of supplies – are the crucial essentials for the survival of our population in the face of fallout from a nuclear attack. Each of these essentials urgently merits the attention of state and local government. In short, government shares a responsibility with its people that they be prepared to survive fallout from a nuclear attack.

Government can meet its part of this joint responsibility in a variety of ways – by leadership, by example, and by protective legislation. Vigorous action is needed in each of these respects.

Survival = 2 weeks on your own



the Essentials

1. **Knowledge.** Our Scientists are still learning about fallout — about its behavior and characteristics as well as its immediate and long term effects on man and his environment. Our experts also are steadily becoming more skilled in how to shield effectively against radiation, how to detect its existence and how to provide the public warnings essential to adequate protection.

These efforts to acquire the knowledge which is basic to effective action must proceed vigorously. Public and private support for the necessary research already exists. It should be continued and intensified.

Acquisition of knowledge, alone, is not enough. It must be communicated in useable form to every individual and family. For it is the individual who must be prepared, *in advance* of a nuclear attack, to survive without help for at least two weeks after the bursting of the initial weapons.

Unfortunately the public is not yet aware of the knowledge which is basic to its survival. The average individual does not now understand the threat of radiation or how to protect against it. Nor does he know how to tell when it is present, or have any conception of how much he can receive without becoming ill. It is vital that there be a prompt and general understanding of such matters.

There are many ways of communicating this knowledge. All of them should be used. Programs of education should be begun in office and factory, and intensified in schools. The newspapers, magazines, community organizations and individual leaders of opinion, all have a responsibility to contribute to the public understanding of fallout and radiation. A special responsibility rests on the agencies of government which can, by aggressive and persistent action, as well as example, create a healthy awareness of the problem of fallout and its solution.

2. **Shielding.** Although there is much still to be learned about radiation, and how to live with it on a long-term basis, there is no lack of available information on which to base a sound course of action for fallout protection.

It is generally accepted that, over a two-week or longer period, total accumulated radiation doses of about 100 roentgens* will produce

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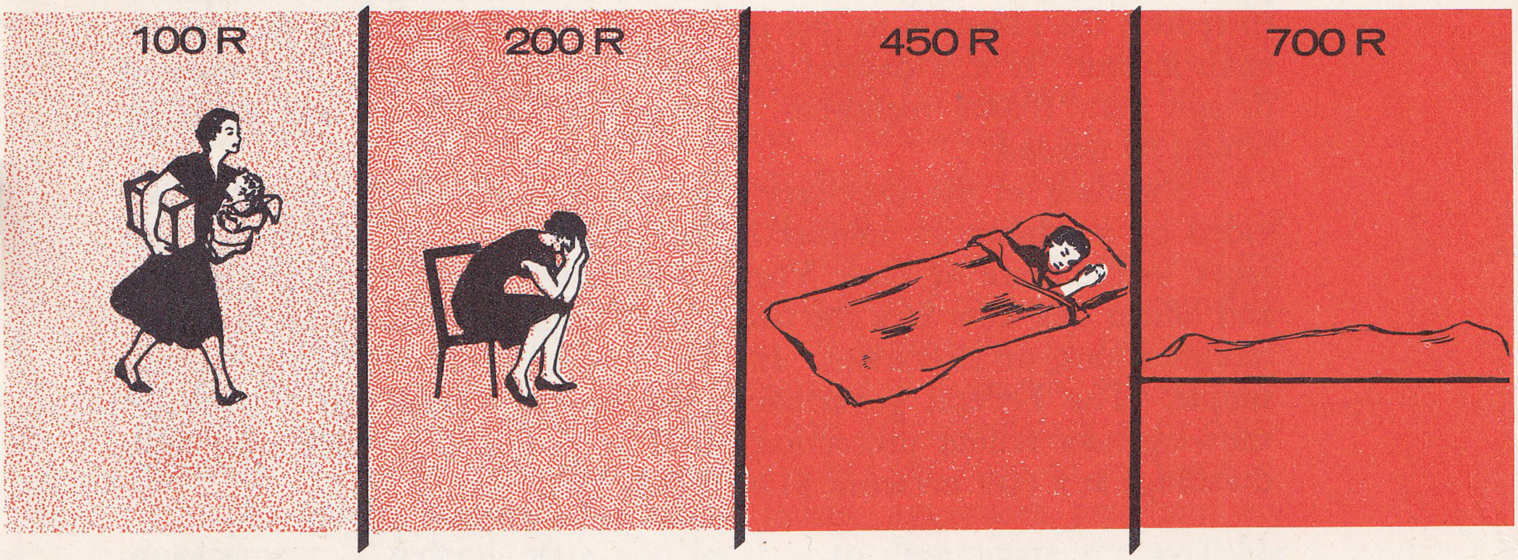
* *A roentgen is a unit of measurement developed by radiologists and named after the discoverer of x-rays, Dr. Roentgen.*

Effects of fallout radiation

24-hour accumulation, whole-body radiation



Still fit **Definitely sick** **Probably die** **Definitely die**

no observable symptoms and will not affect the working efficiency of a group. We accept, therefore, up to 100 roentgens as the total accumulated radiation dose which will permit not only survival, but survival with capacity and vigor to maintain our free institutions and resist aggression.

What is not so clear is the total dose to which any particular area may be subjected in the event of a nuclear war. The total dose will depend on the number of nuclear weapons launched by the enemy, the power and type of the bombs, the location of the bursts, the height of the explosions above the ground, the nature of the radioactive debris, the wind and the weather.

Enough experience has been accumulated from nuclear tests and research to allow an informed judgment on the likely maximum exposure. Let us assume an attack on the continental United States with many weapons, each of multimegaton* capacity, all exploding in close proximity to the ground, and conditions of weather and terrain which create an overlapping pattern of fallout from the multiple nuclear bursts. Under such extremely severe conditions, the accumulated radiation dosage to which any sizeable area (beyond the lethal orbit of blast and heat) will be subjected from fallout is not likely to exceed 10,000 roentgens in two weeks. There might, however, be scattered sections – the "hot spots" – that could be subjected to fallout of somewhat higher radiation intensities.

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* *A megaton is the equivalent of one million tons of TNT.*

If illness or death are to be avoided during the two week period after nuclear attack, shielding is required that will reduce the radiation suffered by any individual to the 100 roentgens which we have accepted as a tolerable level. If we accept the maximum likely accumulated exposure as 10,000 roentgens in two weeks, then shielding will be required to reduce the radiation to one percent of that prevailing in the outside environment. If it is desired to protect against a greater accumulated dosage than 10,000 roentgens, then proportionately greater shielding would be needed.

Shielding in the necessary amounts is undoubtedly already provided by a substantial number of the places in which people live and work in the State of New York. For those homes, schools, factories and offices that now lack the necessary shielding, it can be provided by modifications, or alterations. In many cases these could be relatively simple. The Federal government has recently published a booklet* showing how fallout protection could be provided for existing family dwellings at a cost between $150 and $1,500.

3. **Survival Supplies.** Just as advance planning can provide fallout shielding for the people of the State, so too can preparation make available in the time of nuclear need the pre-stored stocks of supplies essential to survival. For a fully prepared family these stocks would include a two-week supply of water and food, eating utensils, can and bottle openers, pocket knife, cans for wastes, battery-powered radio, flashlights, candles, soap, clothing, bedding, first-aid kits and household tools.

These survival supplies are familiar items. Almost every home has some of them. Yet few, if any, homes have all of them. With planning, however, a "survival kit" of the very crucial items – water, food, cans for excreta, radio – could be prepared that would be within the financial reach of every family, and within their physical reach if the nuclear emergency should come.

Only one crucial item is not yet in existence – a radiation detection meter of sufficient simplicity to advise its user whether he can move about freely in unprotected areas. We understand that the Federal government has a program to develop such radiation meters. Their availability is important to a fully functioning defense against fallout.

We are satisfied, from our review, that an effective kit of survival items could be developed and made available at moderate cost (less than $7 per person, for example, for food and a water container) to all buildings in our State where people live and work. Significant encouragement could also be afforded to individuals preparing their homes for defense against fallout if survival kits were made available at less than cost to all residences which provide radiation shielding of a required standard.

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* *See "The Family Fallout Shelter," published in June, 1959, by the Office of Civil and Defense Mobilization, Washington, D. C.*

Survival kits can and should become a standard item in every home, school, factory and office – much as are fire extinguishers and first-aid kits today. They can and should, moreover, be so planned that they will last indefinitely and not tempt use or consumption in advance of a fallout emergency.

4. *Summary*. The central concern of this report is with the individual citizen and his deeply personal responsibility for his own and his family's survival, without help, for two weeks following a nuclear attack upon the United States. Without such survival all other defense plans are robbed of meaning. The essentials of survival therefore come down, in the last analysis, to three items: – food, water, shelter. One without the others is not enough. All three are required. All three are obtainable.

While much can still be added to our knowledge of fallout protection through public and private programs of research, through experiment and creative design, the main and immediate task is to communicate the knowledge which already exists and then to act upon it.

The action required has many facets: aggressive programs by government – federal, state and local – to disseminate the available knowledge; appropriation of funds for research on radiation and fallout protection by government and private organizations; concentration on resourceful solutions to the hazard of fallout by architects, engineers, builders, contractors, landlords and owners; "do-it-yourself" programs of home owners to add to the radiation protection already built into their homes; government example in providing adequate radiation protection for all government employees and in all government owned or operated facilities; and legislation requiring action by builders and owners to protect against fallout as an essential requirement of public health and safety.

Such programs – public and private – and others like them could provide for the people of our State the knowledge, the shielding, and the supplies required for survival in the wake of a nuclear attack.

The clarity of the steps required, the relatively modest costs involved, the tremendous potential saving in lives that might otherwise be forfeited to fallout, all underscore the imperative responsibility of government to assist its citizens in taking immediate and effective fallout protection measures.

the Program

In order to assist the people of the state to do what they are expected to do under the National Civil Defense Plan — namely, survive without help and in spite of fallout for a minimum of two weeks after a nuclear attack — we recommend the following program directed toward providing the essentials of knowledge, shielding and survival supplies.

1. **As to knowledge:**

We recommend that the state, in full cooperation with the federal and local governments, mobilize its resources to communicate awareness and knowledge about the danger of fallout and the defenses against it.

Every department and agency of government has it within its power to assist the citizen, the landlords, the labor unions, employers and public utilities to a keener appreciation of their responsibility for protection from fallout. Information about the hazards of fallout and their prevention can be widely distributed. Architectural designs and shielding data can be supplied. Building codes, health and sanitation standards, standards for school and factory construction, all can be reviewed with fallout protection in mind. We urge that instructions to this end be issued to every department and agency of the state and a central clearinghouse for information be established. Municipalities should be asked to take similar steps on the local level.

2. **As to shielding:**

We recommend, in the interest of the public health and safety, that you urge the State Legislature, at its next session, to enact a law requiring all new construction within the state to provide shielding from fallout up to a minimum specified standard.

During the last eight years, approximately 700,000 new dwelling units were built in the state. This represented a 15 per cent increase over the 4.6 million such units which existed in 1950.

During the same eight years, construction contracts for about 45,000 non-residential buildings amounted in value to an estimated 8.2 billion dollars. Thus, it is apparent, in the years immediately ahead, a substantial amount of construction can in normal course be designed to afford fallout protection.

The advantages of providing shielding in new construction are several. The cost can be held to a minimum increase over what would have to be spent in any event. By intelligent design, moreover, fallout

shielding can be built into a room or rooms which will serve a regular purpose in the normal family or business activity, in addition to its function as a shelter.

It should be remembered also, that if our homes and working places are designed for fallout protection, there automatically accrues, as an additional benefit, some measure of protection from nuclear blast and heat.

The law we recommend should become effective at the earliest possible date. It should require a specified standard of shielding. The exact standard of shielding should be based on the latest available scientific and military information. In the light of present information, however, we believe the shielding should be such that the sheltered individual has at least 12 square feet of space and is exposed, at the most, to no more than one per cent of the anticipated radiation on the outside.

Some exceptions to the full application of the law we propose should, of course, be provided. For example, full compliance might be excused in hardship cases, in instances where the cost of shielding would be disproportionate to the total cost of the new structure, and under circumstances where adequately shielded facilities are otherwise readily available nearby.

The new law we recommend will not, of itself, bring adequate fallout protection to the millions of homes, schools, factories and offices which are already in existence. A good number of these structures undoubtedly already afford considerable protection. While the bulk of the existing buildings do not now provide the necessary protection, many of them could probably be made to do so with relatively minor alterations.

The modification of existing buildings to provide fallout protection, nevertheless, can be a formidable task. It is a task which, in our view, must be accomplished. Nothing less is at stake than the survival of our people and the success of our negotiations for peace.

Protection from fallout must be made a cardinal principle of state policy. Just as we would move against buildings which were fire traps or were unsafe or unsanitary, so we must modify the buildings which are now "radiation traps" for our people.

This task, we believe, is basic to your responsibility as Governor.

We recommend, therefore, that the proposed new law also require owners of all existing buildings by a specified future date either to modify them or otherwise to provide fallout protection for their occupants.

In connection with this recommendation, it is pertinent to report that a similar law has just been put into effect in Finland. As of July 1, 1959, we understand, every building in Finland which is 3000 cubic meters or larger in size must provide shelter. The Finnish government will also build shelters for transients and the personnel at railroad stations and airports. Local communities in Finland will be required to

provide shelters in bus stations and ports. The government of Finland will also make available loans at low interest rates to communities for public shelter construction.

Such a law as we propose will, of course, require exceptions for hardship cases and for those instances in which the cost of modifications would be disproportionately high. Exceptions will also have to be made to meet unusual situations or to recognize those circumstances under which fallout protection may not be required because it is otherwise readily available. Such a law will present numerous problems — problems of administration, of timing, and of providing the financing to assist the economically hardpressed homeowner in providing radiation protection for his wife and children. The problems, however, are not unlike those which have been met in the past, and successfully resolved, when a public need was clearly identified.

We believe the need for fallout protection is so clear that no father, no property owner, no landlord, no employer, no state administration should any longer permit their children, their families, their tenants, their employees or the people for whom they are responsible to live and work without the assurance of adequate fallout protection.

We suggest that as part of this program the state undertake an immediate survey of state buildings as a basis for your decision as to which of them should be modified by the state to provide shielding from fallout.

In the program which we recommend it will be necessary to enlist the vigorous participation of local communities. The devices for doing this and for assuring the necessary finance to homeowners are matters which we think need not be specified in this report. Your legal, financial and housing advisers will be able to suggest a number of alternatives.

There is one specific suggestion in this area, however, which we would like to make: — namely, to exempt from local taxes all improvements made to afford fallout protection. The availability in every local community of facilities having adequate radiation shielding is so clearly in the public and community interest that such tax exemption is thoroughly justified.

We recommend, therefore, that you sponsor a state law which will exclude improvements, made to provide fallout protection, from local real estate taxes.

The State of Ohio is the first and only state which has, to our knowledge, enacted a law providing such an exemption.

3. **As to survival supplies:**

The need for pre-stored stocks of essential supplies is an urgent and imperative requirement of nuclear survival.

Accordingly, we recommend that you initiate a state program to develop a "survival kit" which would enable persons protected from fallout to survive in their protected area for at least two weeks without any outside assistance.

Such a survival kit should contain at least a water container (ten gallons per person), a two-weeks supply of dehydrated food, candles, a minimum radio tunable only to 640 or 1240 (the emergency frequencies), a radiation detection device and a container for excreta. Without such minimal supplies we cannot expect individuals to remain safely in the protected areas available to them. We suggest, also, that arrangements might be made to utilize in such kits some of the federal stocks of surplus foods.

While factories, commercial buildings and offices might be required to supply such kits for their employees, consideration should be given by the state to supplying such survival kits at reduced cost to every family living within the state.

We also recommend that you initiate a program, in cooperation with the federal government, to develop an effective monitoring system for the detection of radiation. Included in such an effective monitoring system would be a low-cost monitoring device which could be operated and understood by the individual householder. When such a device is developed it should be included in the survival kit.

Since radiation cannot be seen or heard, smelled or tasted, the threat of it would create tremendous anxiety among the population. It is always the unknown that is most feared. Both this fear itself, together with the inability of the householder to tell when the dread and invisible rays of radiation have abated, would seriously impair the ability of our people and their government to cope with the aftermath of attack. If survival is to be meaningful, therefore, our people must know when it is safe – and for how long – for them to go out into unprotected areas. Only with this knowledge can people turn with confidence and vigor to the enormous problems of reconstruction and peace following a nuclear war.

Conclusion

We believe the State of New York has a challenging opportunity to show the way in reducing fallout to a manageable peril. The opportunity is especially challenging because so much has not been done that is well within our capacity to accomplish.

A successful fallout protection program can give assurance of survival to millions who might otherwise die or be seriously crippled from radiation sickness. It can instill in all our people a confidence that, while nuclear war need not come, if it is brought to our continent by an attacking enemy, we will respond with vigor and success. It will provide abundant notice of our purpose to achieve peace by assuring survival for our people and for the free democratic institutions we cherish.

Some reactions of Federal officials and State Governors to this Report . . .

President EISENHOWER, *Letter to Governor Rockefeller, July 29, 1959*

> "I was gratified both by the content of the report, which conforms to the National Plan for Civil Defense and Defense Mobilization, and by your prompt action in support of its recommendations.
>
> "In recognizing your State's responsibility in the field of civil defense you have set a splendid example - - - - - .
>
> "I count on you to continue your efforts to help the people of your State and of the Nation to prepare themselves better for the possibilities of the future."

General NATHAN TWINING, *Chairman, Joint Chiefs of Staff, Letter to Governor Rockefeller, July 23, 1959*

> "While the measures proposed in the report do not fall within the purview of the Joint Chiefs of Staff, I recognize fully that their attainment would constitute a highly significant contribution to national security."

General L. L. LEMNITZER, *U. S. Army Chief of Staff, Letter to Governor Rockefeller, August 24, 1959*

> " - - - your task group has provided a serious and workmanlike treatment of this most vital, complex, and urgent problem.
>
> "I share your concern over the seriousness of the fallout hazard in the event of a nuclear attack on the United States and am particularly interested in the thought expressed by the task group that a well-prepared and safeguarded populace in itself provides a major contribution to our essential nuclear deterrence posture."

Admiral ARLEIGH BURKE, *Chief of Naval Operations, Letter to Governor Rockefeller, July 29, 1959*

> " - - - the ability of our civilian population to recover from a nuclear attack may be the decisive factor in ultimate victory or defeat for our country in case of general war. - - -
>
> "The report prepared by your Special Task Force is an excellent evaluation of the fallout hazard and the essential steps required to counter it. - - -
>
> "Your positive acknowledgment of personal responsibility for helping citizens survive nuclear attack is wonderfully reassuring. The Empire State has long been an important factor in our nation's cultural, economic, political and military strength and it is fitting that you and your great state should set an effective pattern for the entire nation to follow. It is of utmost importance that the nation's capacity for survival and recovery

from nuclear attack be improved — and quickly. To this end, I heartily endorse the program recommended to you by the Special Task Force. - - -

"In terms of national survival in a general war, the effectiveness of military forces have little meaning if our country cannot maintain an effective civil structure after nuclear attack."

General CURTIS E. LeMAY, *Vice Chief of Staff, U. S. Air Force, Letter to Governor Rockefeller, August 3, 1959*

"The Report realistically faces the potential fallout threat and proposes a logical solution for a problem of this magnitude. - - -

" - - - an effective civil defense program is essential for the survival of our nation and our way of life, and — adequate civil defense preparedness would augment our deterrent to war. The importance of this program to national survival warrants the maximum support by the military establishment consistent with its primary defense mission."

LEO A. HOEGH, *Director, Office of Civil and Defense Mobilization, letter to Governor Rockefeller, September 16, 1959*

"I was extremely pleased by the Special Task Force Report on Protection from Radioactive Fallout. Your courageous facing of this issue is a challenge to other States in following your example.

"Certainly our people, made aware of their responsibilities and provided with knowledge and governmental leadership, can properly prepare for survival and thereby greatly enhance the cause of peace."

JOHN McCONE, *Chairman, Atomic Energy Commission, Letter to Governor Rockefeller, August 5, 1959*

"I am impressed with the forthright way your Committee report has reminded the citizens of New York State of the difficulties they may face in the event of a nuclear attack and for the sound and realistic plan recommended for developing public protection."

Report of the Special Committee on Civil Defense of the Governors' Conference — *Unanimously approved by the Governors' Conference, August 4, 1959*

" - - - We are satisfied that it is not necessary for anyone to die from radioactive fallout in a nuclear war if relatively inexpensive preparation is made in advance, if the public is educated to understand the hazard and if, in the event of attack, the simple rules for protection are observed. It is clear that by taking steps which are within our reach as individuals and as states, our people can survive the fallout from even the most severe nuclear attack that might be made upon our country.

"We, as Governors, believe that state governments, in cooperation with the Federal Government, can, by leadership and example, bring into existence the necessary protective preparation to assure such survival. The very existence of this capacity to survive the hazard of fallout will be as potent a force for peace as any we can yet devise. - - -

"The protective measures which are required for survival have an important positive aspect. The taking of protective action by the individual citizen will, of itself, serve abundant notice upon any potential enemy

both that we, as a people, are determined to survive and that we will not be forced by nuclear blackmail either to abandon our friends or to forsake our national interests at home or abroad. The ability of the individual citizen to survive fallout from a nuclear attack is . . . a vital part of the strength which we desperately need if our people are successfully to face the grim and implacable pressures to which they will be increasingly vulnerable in the years ahead as the Soviet intercontinental missile capabilities grow.

"By taking the protective steps which are necessary to our strength and our survival as a nation, the people of our country will be making a major contribution to peace. Confidence in our ability to survive will strengthen our national will; it will bolster the position of our national leaders in foreign policy negotiations; it will materially lessen the temptation to an aggressor to launch an attack; and it will provide assurance that our nation will not only survive nuclear war, but will survive with dignity and without panic for final victory over any enemies who attack us."

Resolution on Fallout Protection from Nuclear Weapons — *Unanimously adopted by the Governors' Conference, August 5, 1959*

"Peace, with dignity, is the paramount concern of our nation. But the maintenance of peace requires national strength. An essential element of this strength is the ability of our nation to survive a nuclear attack.

"Unfortunately, today our people are not prepared to survive the fallout from a nuclear attack on our country. Yet it is the fallout from nuclear weapons . . . which will cause up to three times as many deaths as would result from the bursting of nuclear bombs on targets in our country. - - -

"Protection against fallout, however, can be achieved and achieved by means which are within our reach as individuals and as states. - - -

" - - - we do hereby RESOLVE that — the responsible government officials — federal, state and local — take immediate steps to assist and encourage the people of this country to prepare themselves successfully to survive radioactive fallout - - ."

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PROTECTION FROM RADIOACTIVE FALLOUT